TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

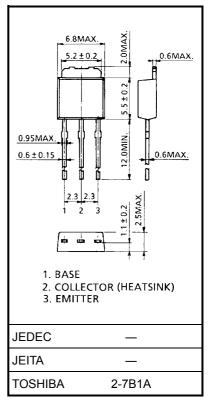
2SD1160

Switching Applications Suitable for Motor Drive Applications

- High DC current gain
- Low saturation voltage: V_{CE} (sat) = 0.6 V (max) (I_C = 2A, I_B = 40 mA)
- Built-in free wheel diode

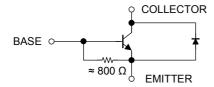
Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit	
Collector-base voltage		V _{CBO}	50	V	
Collector-emitter voltage		V _{CEO}	20	V	
Emitter-base voltage		V _{EBO}	6	V	
Collector current	DC	Ι _C	2	A	
	Pulse	I _{CP}	4		
Diode forward surge current (t = 1 s)		I _{FP}	1	А	
Collector power dissipation	Ta = 25°C	D.	1	W	
	Tc = 25°C	P _C	10		
Junction temperature		Tj	150	°C	
Storage temperature range		T _{stg}	-55 to 150	°C	



Weight: 0.36 g (typ.)

Equivalent Circuit



Unit: mm

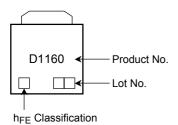
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I _{CBO}	V _{CB} = 50 V, I _E = 0	_	_	1	μA
Emitter cut-off current	I _{EBO}	V _{EB} = 5 V, I _C = 0	2.5	6.25	15	mA
Collector-emitter sustaining voltage	V _{CEO (SUS)}	I _C = 20 mA, L = 40 mH	20			V
DC current gain	h _{FE (1)} (Note)	V _{CE} = 2 V, I _C = 1 A	100		300	
	h _{FE (2)}	V _{CE} = 2 V, I _C = 2 A	60			
Collector emitter saturation voltage	V _{CE (sat)}	I _C = 2 A, I _B = 40 mA	_	0.4	0.6	V
Base-emitter saturation voltage	V _{BE (sat)}	I _C = 2 A, I _B = 40 mA	_	_	1.5	V
Emitter-collector forward voltage	V _{ECF}	I _E = 1 A, I _B = 0			2.0	V

Note: $h_{FE(1)}$ classification O: 100 to 200, Y: 150 to 300

Classification	Min	Max
2SD1160-O	100	200
2SD1160-Y	150	300

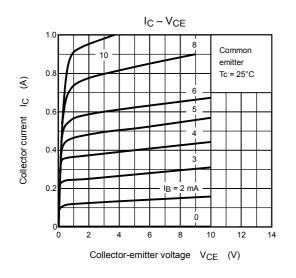
Marking

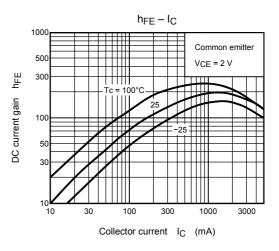


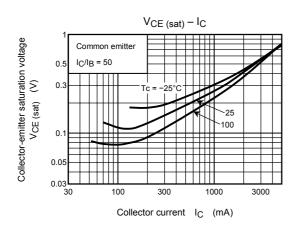
Explanation of Lot No.

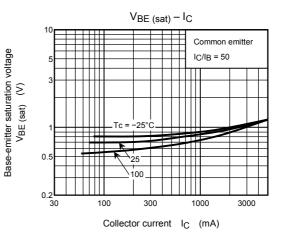
Month of manufacture: January to December are denoted by letters A to L respectively. Year of manufacture: last decimal digit of the year of manufacture

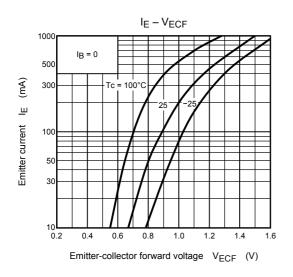
TOSHIBA

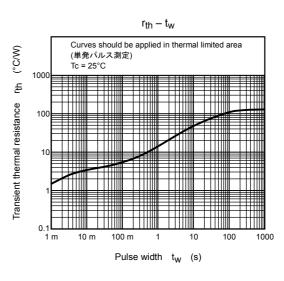


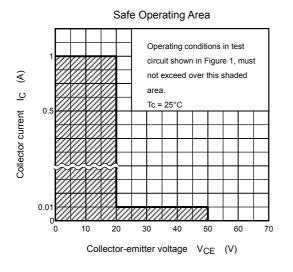


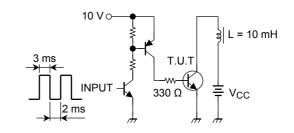




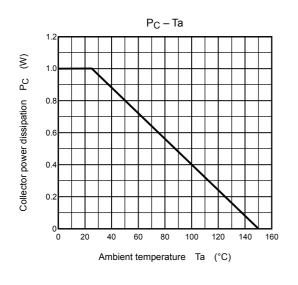












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